

Exponent®
Engineering & Scientific Consulting

Andy Tam

Senior Engineer | Electrical Engineering
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Professional Profile

Mr. Tam is an experienced electronic engineer in the areas of consumer electronics and medical devices. He has helped clients by performing root cause analysis of electronic failures, performing safety design reviews of consumer products, and formulating test strategies for compliance to various electrical safety standards.

Mr. Tam also has experience in the design, manufacturing, and testing of battery-powered devices, medical devices and power adapters.

Mr. Tam's professional experience spanned across different stages of product introduction in different industries. Prior to joining Exponent, he was the chief hardware designer of an active medical eye implant device for treating retinal degeneration diseases. He led the design of the hardware system including the RF energy harvester, the active filter for data recovery, and the power system. Apart from his industry experiences, Mr Tam has also designed a multipurpose biomedical electrical stimulator during his graduate research. This technology was later adopted by various research institutes around the world for the investigation of regeneration of neural stem cells and retinal cells using electrical stimulation.

Academic Credentials & Professional Honors

M.Phil., Electronical and Computer Engineering, Hong Kong University of Science and Tech, 2018

B.B.A., General Business Management, Hong Kong University of Science and Tech, 2015

B.Eng., Electronic Engineering, Hong Kong University of Science and Tech, 2015

Hong Kong & Kowloon Electrical Appliances Merchants Association Scholarship, 2013-2014

Licenses and Certifications

ASQ Certified Reliability Engineer

Certified ISO 13485 Medical Device Management Systems Lead Auditor

ISO 13485:2016 ASQ Certified Internal Auditor

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Prior Experience

R&D Lead, Neurotech HK Limited, 2021

Research Intern, TSMC, 2014

Languages

Cantonese Chinese

Mandarin Chinese

Publications

He, L., Sun, Z., Li, J., Zhu, R., Niu, B., Tam, K. L., et al. (2021). Electrical stimulation at nanoscale topography boosts neural stem cell neurogenesis through the enhancement of autophagy signaling. Biomaterials, 268, 120585.

Project Experience

Chief hardware designer of a battery-powered active eye implant device with long range wireless charging circuitry, TDMA wireless communications, and data storage. The system achieved higher signal-to-noise ratio and demonstrated fully functional bi-directional wireless communications.

Led the adoption of ISO 13485 and ISO 14971 at a medical device startup company.

Simulated the variations in the dielectric constants of various on-chip materials at ultra-high frequencies using finite element analysis software (TSMC, 2014).

Research Grants

Steering committee of the government-funded research project PRP/068/19FX: Development of a Long-Term Biocompatible Wireless Transcleral Electrical Stimulation Implant System for Pre-clinical Trials (2020-2022)